STATE OF NEW HAMPSHIRE

DEPARTMENT OF HEALTH AND HUMAN SERVICES

DIVISION OF PUBLIC HEALTH SERVICES

WEEKLY INFLUENZA SURVEILLANCE REPORT
Week ending May 21, 2011 – MMWR Week 20

The NH Department of Health and Human Services (DHHS) provides weekly influenza surveillance reports during the traditional influenza season, which starts at the beginning of October and goes through mid-May. The 2010–11 influenza season began on 10/03/2010.

Summary MMWR Week 20 Activity

- Influenza-like illness and acute respiratory illness were the same or similar compared to the previous week at 0.1% and 2.0% of patient visits, respectively.
- Pneumonia and influenza-related deaths accounted for 10.1% of deaths, which was below the epidemic threshold of 10.3% for week 20.
- Four new respiratory specimens were submitted for laboratory testing during week 20. Three were negative and one was rejected.
- NH reported 'sporadic' activity for week 20.

New Hampshire Surveillance

Laboratory Surveillance

The NH Public Health Laboratories (PHL) receives respiratory specimens for influenza testing from health care providers and hospitals throughout the State. Testing is important to identify circulating influenza viral subtypes and to confirm specimens that test positive by rapid test.

Results of specimens received by the PHL during week 20 and cumulative totals for the 2010-11 influenza season are presented in the table below.

Table 1: Results of Specimens Received by the PHL during the 2010-11 Influenza Season

	Week 20 (5/15/11–05/21/11)		YTD (10/03/10–05/29/11)	
Results	# specimens	% of total positive	# specimens	% of total positive
Influenza A (H1)	0	0	0	0
Influenza A (H3)	0	0	166	58
2009 Influenza A (H1N1)	0	0	95	33
Influenza B	0	0	27	9
Negative for influenza	3		397	
Total	4 Ψ		693 Ψ	

Ψ Total includes rejected specimens and specimens for which results are pending or inconclusive.

Outpatient Illness Surveillance

The two components of outpatient illness surveillance in NH are as follows:

1. *U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet)*: Beginning in 1997, NH has participated in this collaborative effort between the Centers for Disease Control and Prevention, state and local health departments, and health care providers. For the 2010-11 influenza season, 34 NH health care providers are participating. Participating providers report the proportion of patients who present with influenza-like illness (ILI) on

a weekly basis. ILI is defined as 1) a fever and 2) cough and/or sore throat, in the absence of a known cause. Participating providers are also asked to collect respiratory specimens from select patients and submit them to the PHL for viral subtyping.

2. *The Automated Hospital Emergency Department Data (AHEDD) system:* This system is a collaborative effort between NH acute care hospitals and the NH DHHS. Currently, 25 hospitals electronically transmit real-time data from emergency department encounters throughout the day to NH DHHS. Chief complaint text within the system is queried for complaints of acute respiratory illness (ARI) in patients seen in emergency departments. While ARI includes encounters that fit the definition of ILI above, it also includes encounters for complaints such as acute bronchitis or otitis media.

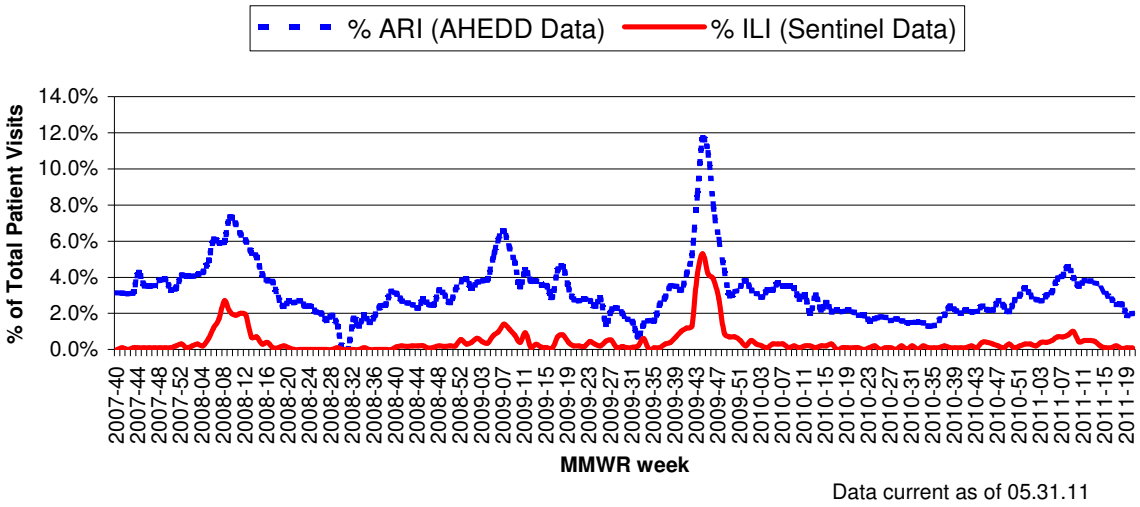
Because these two systems collect information using different methods and represent different patient populations, it is expected that the proportions of ILI and ARI seen in these systems will differ. However, the overall trend of activity is expected to be similar.

For week 20 (5/15/11-05/21/11), 0.1% of patient visits to NH ILINet participating providers were due to ILI, based on 19 providers reporting 3,801 patient visits, which is the same as activity reported for week 19 (0.1%). In AHEDD for week 20, 2.0% of patient visits to hospital emergency departments were due to ARI, based on 25 hospitals reporting a total of 12,737 patient encounters, which is similar compared to activity for week 19 (1.9%).

Maps illustrating degree of ARI activity for each of the ten counties for weeks 20 and 21 are available at http://www.dhhs.nh.gov/dphs/cdcs/influenza/arisurveillance.htm

Reported ARI & ILI for 2010-11 and for the three previous seasons is shown in the graph below.

ARI* & ILI Reported through AHEDD and by ILINet Participating Providers MMWR Week 40 2007 to MMWR Week 20 2011 (September 30, 2007 to May 21, 2011)



Data current as of 05.31.11

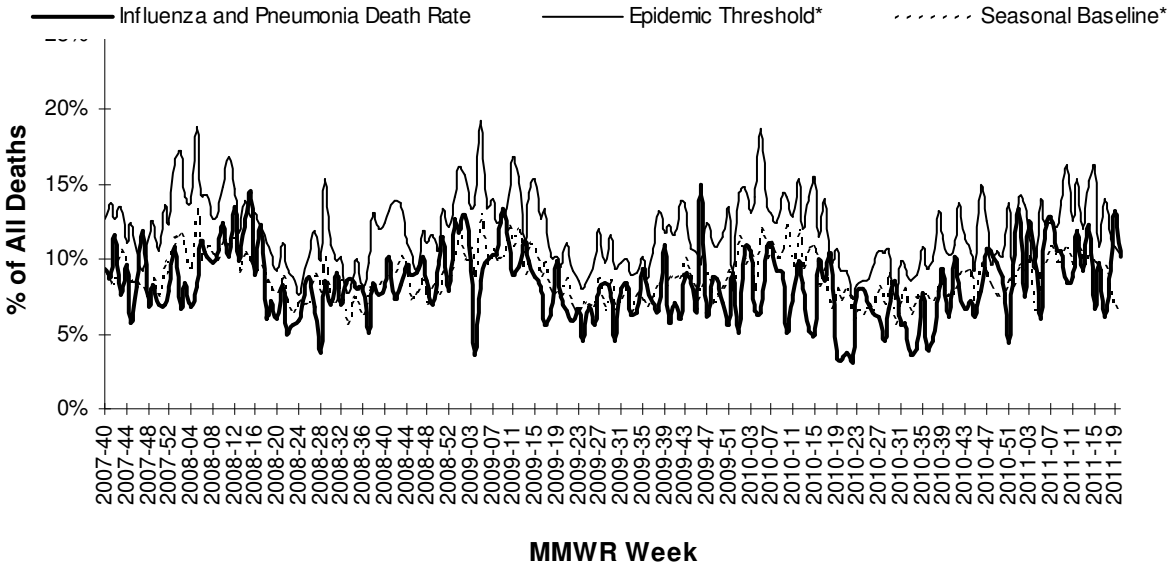
*ARI data not available for MMWR weeks 30 and 31 in 2008.

Pneumonia & Influenza Mortality

P&I deaths in NH are identified through review of electronically filed death certificates by looking at the causes of death listed on each death certificate. The graph below, which shows the proportion of deaths attributed to P&I, represents all deaths recorded by NH's Division of Vital Records Administration. This includes resident and non-resident deaths that occurred within the State, and may not include deaths of NH residents that occurred out-of-state, or cases being investigated by the Medical Examiner's Office.

For week 20 (5/15/11-05/21/11), 10.1% of all deaths recorded in NH were reported as due to P&I. This is below the epidemic threshold for week 20 (10.3%).

Pneumonia and Influenza Mortality, New Hampshire
MMWR Week 40 2007 to MMWR Week 20 2011
(September 30, 2007 to May 21, 2011)



*Seasonal baseline is calculated using the previous 5 years of data. If the proportion of P&I deaths for a given week exceeds the baseline value for that week by a statistically significant amount (1.645 standard deviations), then P&I deaths are said to be above the epidemic threshold, and the proportion of deaths above threshold are considered attributable to influenza.

School Surveillance for Absenteeism and Influenza-like Illness

Beginning with the 2009-2010 school year, an ILI web reporting tool for NH schools was implemented to better evaluate trends of ILI in communities over time. For the 2010-2011 school year, all New Hampshire schools are asked to voluntarily report via a revised web reporting tool the daily aggregate counts for student absenteeism and counts of students absent for ILI. For week 20 (5/15/11-05/21/11), the overall state absenteeism rate was 3.3% based on 135 (21%) of 656 NH public and private schools reporting the number of students absent. The overall state student absenteeism for ILI rate was 0.1% for the week based on 90 (14%) schools reporting students absent due to ILI. Maps illustrating absenteeism data by SAU are available at: http://www.dhhs.nh.gov/dphs/cdcs/influenza/schoolsurveillance.htm

Over-the-counter Pharmaceuticals and Antiviral Sales

DHHS receives automated data of OTC pharmaceuticals sales from 26 pharmacies statewide. Sales are categorized into six categories based on the UPC code, including categories for cough and cold remedies. A total of 542 cold remedies (7% of total sales) were sold during week 20, which is a decrease compared to the previous week (19%). A total of 425 cough remedies (7% of total sales) were sold during week 20, which is a decrease compared to the previous week (19%).

A CDC system called BioSense receives anti-infective prescription data from RelayHealth, an electronic prescription claims services provider for outpatient pharmacies in all 50 states and the District of Columbia. Anti-infectives include antibiotics, antivirals (influenza only), antifungals, and anti-mycobacterials. The percent antiviral measure represents the ratio of influenza antiviral drug prescriptions to all anti-infective medication prescriptions. Antiviral prescription sales for week 20 were unavailable at the time this report was completed.

Influenza Activity as Assessed by State Epidemiologist
Overall influenza activity in NH for week 20 was 'sporadic.' Flu activity for week 21 was reported as 'no activity'.

Reported flu activity level in NH is based on ILI reported by the participating providers and AHEDD surveillance systems, reported outbreaks in facilities, and reports of laboratory confirmed influenza.

Influenza activity levels are defined by CDC as follows:

- **No Activity:** Low ILI activity and no laboratory-confirmed cases of influenza.
- **Sporadic:** Low ILI activity and isolated laboratory-confirmed influenza cases or a single influenza outbreak has been reported.
- **Local:** Increased ILI activity or influenza outbreaks in a single region of the state, and recent laboratory-confirmed influenza in that region.
- **Regional:** Increased ILI activity or influenza outbreaks in ≥ 2, but less than half of state regions, and recent laboratory-confirmed influenza in affected regions.
- **Widespread:** Increased ILI activity or influenza outbreaks in at least half of state regions, and recent laboratory-confirmed influenza in the state.

National Surveillance

Synopsis: During week 20 (5/15/11-05/21/11), influenza activity in the United States remained low.

- Of the 1,192 specimens tested by U.S. World Health Organization (WHO) and National Respiratory and Enteric Virus Surveillance System (NREVSS) collaborating laboratories and reported to CDC/Influenza Division, 9 (0.8%) were positive for influenza.
- The proportion of deaths attributed to pneumonia and influenza (P&I) was 7.4%, which is slightly above the epidemic threshold (7.3%).
- No influenza-associated pediatric deaths were reported. This season, 105 laboratory-confirmed influenza-associated pediatric deaths have been reported to CDC.
- The proportion of outpatient visits for influenza-like illness (ILI) was 0.9%, which is below the national baseline of 2.5%. All 10 regions reported ILI below region-specific baselines. New York City and 49 states experienced minimal ILI activity, and the District of Columbia and one state had insufficient data to calculate an ILI activity level.
- The geographic spread of influenza in Puerto Rico and 21 states was reported as sporadic (including Connecticut, Massachusetts, and New Hampshire), and the District of Columbia, U.S. Virgin Islands, Guam, and 29 states reported no influenza activity (including Maine, Rhode Island, and Vermont).

Laboratory Surveillance

During week 20 (5/15/11-05/21/11), WHO and NREVSS laboratories located in all 50 states and Washington D.C. reported 1,192 specimens tested for influenza viruses, nine (0.8%) of which were positive: zero influenza A (H1) viruses, one influenza A (H3) virus, two influenza A viruses that were unsubtyped, zero influenza A viruses that could not be subtyped, zero 2009 influenza A (H1N1) and six influenza B viruses.

Antigenic Characterization: CDC has antigenically characterized 2,494 influenza viruses [613 2009 influenza A (H1N1) viruses, 1,139 influenza A (H3N2) viruses, and 742 influenza B viruses] collected by U.S. laboratories since October 1, 2010.

- Six hundred twelve (99.8%) of the 613 2009 influenza A (H1N1) viruses were characterized as A/California/7/2009-like, the influenza A (H1N1) component of the 2010-11 influenza vaccine for the Northern Hemisphere. One virus (0.2%) of the 613 tested showed reduced titers with antiserum produced against A/California/7/2009.
- One thousand one hundred three (96.8%) of the 1,139 influenza A (H3N2) viruses were characterized as A/Perth/16/2009-like, the influenza A (H3N2) component of the 2010-11 influenza vaccine for the Northern Hemisphere. Thirty-six viruses (3.2%) of the 1,139 tested showed reduced titers with antiserum produced against A/Perth/16/2009.
- Six hundred ninety-nine (94.2%) of 742 influenza B viruses tested belong to the B/Victoria lineage of viruses and were characterized as B/Brisbane/60/2008-like, the recommended influenza B component for the 2010-11 Northern Hemisphere influenza vaccine (one of these 699 viruses showed somewhat reduced titers with antisera produced against B/Brisbane/60/2008). Forty-three (5.8%) out of the 742 viruses were identified as belonging to the B/Yamagata lineage of viruses.

Antiviral Resistance: Testing of 2009 influenza A (H1N1), influenza A (H3N2), and influenza B virus isolates for resistance to neuraminidase inhibitors (oseltamivir and zanamivir) is performed at CDC using a functional assay. Additional 2009 influenza A (H1N1) clinical samples are tested for a single known mutation in the neuraminidase protein of the virus that confers oseltamivir resistance (H275Y). The data summarized below combine the results of both test methods and includes samples that were tested as part of routine surveillance purposes; it does not include diagnostic testing specifically done because of clinical suspicion of antiviral resistance.

High levels of resistance to the adamantanes (amantadine and rimantadine) persist among 2009 influenza A (H1N1) and A (H3N2) viruses (the adamantanes are not effective against influenza B viruses) circulating globally. Therefore, this data is not presented in the table below.

	Isolates tested (n)	Resistant Viruses, Number (%) Oseltamivir	Isolates tested (n)	Resistant Viruses, Number (%) Zanamivir
Seasonal Influenza A (H1N1)	0	0 (0)	0	0 (0)
Influenza A (H3N2)	806	2 (0.2)	784	0 (0)
Influenza B	723	0 (0)	723	0 (0)
2009 Influenza A (H1N1)	4,229	39 (0.9)	771	0 (0)

For more detailed information, CDC's weekly influenza surveillance report can be found at http://www.cdc.gov/flu/weekly/.

To prevent the spread of antiviral resistant virus strains, CDC reminds clinicians and the public of the need to continue hand and cough hygiene measures for the duration of any symptoms of influenza, even while taking antiviral medications. Additional information on antiviral recommendations for treatment and chemoprophylaxis of influenza virus infection is available at http://www.cdc.gov/flu/professionals/antivirals/guidance/